

Reply to Office Action of December 06, 2006

REMARKS/ARGUMENTS

This reply is fully responsive to the Office Action dated 06 DECEMBER 2006, and is filed within five - (5) months following the mailing date of the Office Action. The
5 Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed. The method of payment and fees for petition fee due in connection therewith is enclosed.

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Disclosure/Claims Status Summary:

This application has been carefully reviewed in light of the Office Action of December 06, 2006, wherein:

- 15 A. Claims 2-6 and 8-16 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement;
- B. Claims 1, 2, 4-8, and 11-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung-I et al., in view of Kaufman, and in further view of Leung-II et al.;
- 20 C. Claims 3 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung-I et al., in view of Kaufman and Leung-II et al., and in further view of Anderson et al.; and
- D. Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung-I et al., in view of Kaufman and Leung-II et al., and in further view of Mantei et al.

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Please note that, in order to facilitate the reading of this Office Action Response, all the statements submitted by the Applicants have been indented while the Examiner's statements (presented in the Office Action dated 6 DECEMBER 2006) are not indented.

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Claim Rejections - 35 U.S.C. § 112, first paragraph

In the first section of the Office Action, the Examiner rejected Claims 2-6 and 8-16 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement, and as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 15 and 16

Regarding Claims 15 and 16, the Examiner stated that the phrase “wherein the container is positioned in the path of the oxygen plasma,” does not appear to be supported by the specification as originally filed.

Regarding the rejections of Claims 15 and 16 as containing subject matter not described in the specification

- The Applicants conducted a telephonic interview with the Examiner, Richard R. Bueker, on April 5, 2007, regarding the rejection by the Examiner of the use of the word “container.” During the telephonic interview, the Examiner stated that the specification for the present invention did not support the use of the word “container” as claimed in Claims 15 and 16. However, the Examiner agreed that the language in the specification (referring to page 8 lines 18 to 20) supported the use of a “means for positioning,” a “positioning device,” or a “positioning apparatus.” The Applicants submit that the Examiner further stated that “using a positioning device is an acceptable meaning of the disclosure,” and that the Examiner will likely be willing to remove his rejection of Claims 2-6 and 8-16 under 35 U.S.C. 112, first paragraph, if the Applicants amend the claims to remove the word “container” and replace it with a “positioning device.”

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In Accordance, the Applicants have cancelled Claims 15 and 16 from consideration (which comprised a container for placing at least one diamond sample in the path of the oxygen plasma).

5 Pursuant to the Examiner's suggestions, the Applicants have currently amended base Claims 1 and 7 to further comprise "a positioning device for allowing a user to position at least one diamond sample in the path of the oxygen plasma exiting through the plasma source exit." These amendments are additional specific statements of inventive concepts
10 described in the application as originally filed.

- The Applicants submit that support for the current amendments to Claims 1 and 7 can be found on the present invention page 8 lines 18-21, where the specification states that "with appropriate positioning from the plasma
15 source exit (referring to element 102 in Figures 1 and 2), the diamond surface(s) (referring to element 130 in Figures 1 and 2) may be completely covered by the atomic oxygen plasma plume (referring to element 204 in Figure 2)." Furthermore, the Applicants submit that the present invention also teaches that the diamond sample, or samples, of interest are placed
20 beyond the plasma source exit (referring to present invention page 6 lines 18-19), which is language in the specification that supports the use of "means for placing," a "placing device," or a "placing apparatus," which are analogous to the "positioning device for allowing a user to position at least one diamond sample in the path of the oxygen plasma exiting through
25 the plasma source exit," as claimed in Claims 1 and 7. The Applicants further submit that "using a positioning device" is an acceptable meaning of the disclosure.

- The Applicants further refer the Examiner to the present invention, page 8,
30 lines 3-4, where the present invention recites that "the low energy electrons

aid in the dissociation of the molecular oxygen ions into atomic ions before the plasma leaves the plasma source as a plume (referring to element 204 in Figure 2) on its way to the diamond surface(s) (referring to element 130 in Figure 2).” Therefore, the Applicants submit that the present invention clearly emphasizes that the positioning or placement of the diamond samples must be on the way or path of the oxygen plasma plume, as recited in Claims 1 and 7.

- Regarding the Examiner’s statement that “based on what is shown in the Applicants’ Figure 5, it appears to the Examiner that the unidentified item in Figures 1 and 2 may have been intended to represent the main body of the diamond sample,” the Applicants submit that the Examiner has mistakenly equated the “uniformly smooth, optical quality diamond surface” resulting from applying the present invention to a rough diamond sample, with the unlabeled (unidentified) positioning device in Figures 1 and 2 (referring to unlabeled element below element 130 in Figures 1, 2, and 5). The Applicants assert that Figure 5 of the present invention illustrates the etching mechanism (referring to page 9 lines 20-24) used to etch or polish a diamond sample with a rough surface (referring to top diamond sample illustrated in Figure 5), into a uniformly smooth, optical quality diamond surface (referring to bottom diamond sample illustrated in Figure 5, and page 10 lines 20-24).

- The Applicants submit that further support for the positioning device of Claims 1 and 7 can be found on pages 3-10 of the specification, and in Figures 1 and 2 (referring to unlabeled element below element 130 in Figures 1 and 2). Specifically, the Applicants submit that Figures 1 and 2 clearly illustrate “a positioning device (referring to unlabeled element below element 130 on Figures 1 and 2) for allowing a user to position at least one diamond sample (referring to element 130 on Figures 1 and 2) in

the path of the oxygen plasma (referring to element 204 in Figure 2) exiting through the plasma source exit (element 102 in Figures 1 and 2),” as recited in Claims 1 and 7.

- 5 ▪ Therefore, the Applicants respectfully request that the Examiner accept the currently amended set of claims. The Applicants believe the claims, as currently amended, overcome the rejections cited by the Examiner.

10 In light of these amendments and the remarks made above, the Applicants believe Claims 1 and 7 to be allowable in their present form, and respectfully request that these rejections under the second paragraph of 35 U.S.C. § 112 be withdrawn.

15 **Regarding the rejections of Claims 2-6 and 8-14 under 35 U.S.C. § 112, first paragraph**

20 The Applicants submit that Claims 2-6 and 8-14 were rejected under 35 U.S.C. § 112 first paragraph based on their dependency on Claims 1 and 7 and on the currently cancelled Claims 15 and 16. Therefore, the Applicants refer the Examiner to the comments above regarding the amendments to Claims 1 and 7. In light of the amendments and remarks made above, the Applicants believe Claims 1 and 7 to be allowable in their present form. Therefore, the Applicants submit that Claims 2-6 and 8-14 are also allowable in their present form at least based on their dependence upon an allowable base claim, and respectfully request that these
25 rejections of Claims 2-6 and 8-14 under the second paragraph of 35 U.S.C. § 112 be withdrawn.

Claim Rejections - 35 U.S.C. § 103(a)

Examiner’s rejections of Claims 1, 2, 4-8, and 11-16 under 35 U.S.C. § 103(a)

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The Examiner rejected Claims 1, 2, 4-8, and 11-16 under 35 U.S.C. § 103(a) as being unpatentable over Leung-I et al. (U.S. Patent No. 5,198,677, hereinafter referred to as the "Leung-I patent"), in view of Kaufman (U.S. Patent No. 4,481,062, hereinafter referred to as the "Kaufman patent"), and further in view of Leung II (U.S. Patent No. 5,587,226, hereinafter referred to as the "Leung-II patent").

In particular, the Examiner stated that the Leung-I patent discloses an ion source (referring to Figure 1) including a plasma generating chamber, magnets arranged around the chamber, a tungsten filament that is heated by a filament power source, a gas port, a bias DC power source, and an array of magnets at the exit of the chamber that act as a magnetic filter of the type claimed by the Applicants.

The Examiner further stated that the Leung-I patent teaches that his magnetic filter design desirably produces a stream of mainly atomic ions, and that the ion source of the Leung-I patent also includes a cooling channel formed between a plasma generation chamber and a cylindrical wall for cooling magnets in the channel, and a liner made of a high-temperature resistant material such as molybdenum provided within the chamber (referring to column 3, line 10 through column 4, line 10). Furthermore, the Examiner stated that the Leung-I patent uses a DC power source (referring to element 58 in Figure 1) to heat the tungsten filament.

In addition, the Examiner stated that the Leung-I patent does not discuss the use of an AC power source to heat his tungsten filament, and that the Leung-I patent does not discuss using his ion source to generate atomic oxygen ions. The Examiner further stated that the Kaufman patent (referring to Figure 1 and column 5, lines 1-6) teaches that either an AC or DC power source can be used to heat a tungsten filament to thermionic temperatures. Then, the Examiner concluded that it would have been prima facie obvious to one skilled in the art to modify the ion

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source of the Leung-I patent by substituting an AC power source for DC power source of the Leung-I patent (referring to element 58 in Figure 1), because the Kaufman patent teaches that an AC power source was known to be a functional equivalent power source for heating a tungsten filament to thermionic temperatures.

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Regarding the production of atomic oxygen ions, the Examiner stated that the Leung-II patent teaches (referring to the entire patent and in particular column 13, lines 7-29, and column 15, lines 13-41) that it is desirable to produce a stream of atomic oxygen ions for materials processing. The Examiner also stated that the Leung-II patent teaches that a magnetic filter of the type used by the Leung-I patent will produce such a stream of atomic oxygen ions. The Examiner then concluded that it would have been obvious to one skilled in the art to use the atomic ion source of the Leung-I patent to produce the desired atomic oxygen ions by providing the ion source of the Leung-I patent with a source of oxygen, as presently claimed. The Examiner further stated that the Leung-II patent also teaches (referring to column 15, lines 15-41) that his antenna ion source is more desirable for oxygen ion production than a DC discharge ion source of the type disclosed by the Leung-I patent. Next, the Examiner noted that a non-preferred embodiment disclosed in the prior art can properly be used as a prior art teaching and that the use of a non-preferred embodiment would have been obvious to one willing to accept the drawbacks taught. See *In re Boe*, 148 USPQ 507; *In re Mills*, 176 USPQ 196 and *In re Susi* 169 USPQ 423.

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With regards to the Applicants' response filed September 21, 2006, the Examiner

stated that "the Applicants have argued that the combination of the Leung I, Kaufman, and Leung II patents do not solve the problem of diamond polishing, and that diamond polishing is a recitation of intended use of the claimed apparatus, and thus the claimed apparatus is not so limited." The Examiner further stated that there is no actual requirement that the presently claimed apparatus ever be used for polishing diamonds, and that it has been held that claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function

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(*In re Danley*, 120 USPQ 528, 531). The Examiner stated that “Apparatus claims cover what a device is, not what a device does” (*Hewlett-Packard Co. V. Bausch & Lomb Inc.*, 15USPQ2d 1525), and that “a claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art teaches all the structural limitations of the claim” (*Ex parte Masham*, 2 USPQ2d 1647). Also see MPEP 2114.

With regards to Claim 1, the Examiner stated that the Claim 1 limitation of “wherein the filtration magnets pass the oxygen plasma to the plasma source exit and prevent the primary electrons from entering the downstream region of the reaction chamber” (referring to Claim 1, lines 25-27), is taught by both the Leung I patent (referring to column 3, lines 40-46) and the Leung II patent (referring to column 13, lines 20-29). The Examiner further stated that both of the Leung I and Leung II patents teach that while energetic primary electrons are blocked by the magnetic filter, plasma passes the filter and that plasma passes into the extraction region, and that this is all that is required by the above quoted Claim 1 limitation. The Examiner noted that the “downstream region” recited in Claim 1 is equivalent to “the extraction region” taught by the Leung I and Leung II patents.

Regarding the rejection of base Claims 1 and 7 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent

The Applicants submit that the CCPA stated that under 35 U.S.C. § 103(a), “In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification” *In re Lintner*, 458 F.2d 1013 (C.C.P.A., 1972). Further, the CCPA has subsequently added that the prima facie case requires that the reference teachings

“appear to have suggested the claimed subject matter.” *In re Rinehart*, 531 F.2d 1048 (C.C.P.A. 1976). The MPEP 2143.03 further noted that, to establish a *prima facie* case of obviousness, “all the claim limitations must be taught or suggested by the prior art.”

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- Since it has been held that claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (*In re Danley*, 120 USPQ 528, 531), the Applicants have amended the base Claims 1 and 7 to include a structural element missing from the original claims, wherein this structural element is supported by the language in the specification and has an acceptable meaning of the disclosure (referring to the “positioning device for allowing a user to position at least one diamond sample in the path of the oxygen plasma exiting through the plasma source exit”). The Applicants believe that these amendments to the base claims structurally disclose a receptacle (positioning device) for placing (positioning) diamonds in order to be polished by the present invention.

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- In light of the current amendments to Claims 1 and 7, the Applicants respectfully submit that that, in contrast to the present invention, the combination of the Leung-I patent with the Kaufman patent and the Leung-II patent never discloses or even suggests a positioning device for allowing a user to position at least one diamond sample in the path of the oxygen plasma exiting through the plasma source exit. The Applicants refer the Examiner to the statements above regarding the language in the specification supporting the use of a “positioning device.” The Applicants further submit that “using a positioning device” is an acceptable meaning of the disclosure.

The Applicants respectfully request that the Examiner indicate exactly where, in the prior art, the Examiner finds a positioning device for allowing a user to position at least one diamond sample in the path of the oxygen plasma exiting through the plasma source exit.

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Therefore, the Applicants submit that the combination of the Leung-I patent with the Kaufman patent and the Leung-II patent, in combination with the knowledge of one skilled in the art, does not teach, disclose, or suggest all of the limitations of Claims 1 and 7.

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- Furthermore, the Applicants submit that the present invention provides a apparatus which presents a solution to an unsolved need in a crowded art, and as such, the present invention should be regarded as significant and thus, non obvious. The present invention is classified in the crowded art of optical quality diamond polishing. Specifically the present invention relates to the use of plasma-enhanced chemical etching techniques for polishing a synthetic diamond to an optical quality surface (referring to the present invention page 1 line 10, and Claims 1 and 7). In the crowded art of optical quality diamond polishing, there are several apparatus to polish diamonds to optical quality, however they require repetitive ion implantation and high ion energies, which can result in directional sputtering on the diamond's surface (referring to present invention page 2). In addition, the repeated scanning of the beam over a diamond sample is a slow and expensive process. In contrast, the present invention provides an apparatus for rapid, uniform, safe, and cost-effective synthetic diamond polishing (referring to present invention pages 3-10, Claims 1 and 7, Figures 1, 2, and 5) by generating high concentrations of low energy atomic oxygen ions over a large surface area. The diamond is quickly and uniformly polished by placing (positioning) the diamond in the path of the oxygen plasma exiting through the plasma source exit of the

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invention, and by keeping the diamond in the path of the oxygen plasma until the surface of the diamond sample has optical quality smoothness. Furthermore, the oxygen plasma producing element disclosed in Claims 1 and 7 can operate at lower voltages than apparatus for ion implantation, thereby reducing both capital investment and safety concerns. Moreover, because the oxygen plasma producing element of the present apparatus generates a large plume of oxygen plasma, large diamond samples can be polished in their entirety without beam scanning, thus multiple samples can be polished simultaneously and quickly.

For the foregoing reasons the Applicants respectfully believe that the present application provides a structure that presents a solution to an unsolved need in a crowded art, and as such, the present invention should be regarded as significant and thus, non obvious.

- For at least the foregoing reasons the Applicants respectfully submit that Claims 1 and 7, as written, are patentable over the prior art and respectfully request that this rejection of Claims 1 and 7 under 35 U.S.C. §103(a) be withdrawn.

Examiner's rejections of Claims 15 and 16

The Examiner stated that the limitation of Claims 15 and 16 of "a container for placing at least one diamond sample" is a recitation of intended use that does not require the presence of a diamond sample. The Examiner further stated that the limitation of Claims 15 and 16 of "wherein the container is positioned in the path of the oxygen plasma" is also a recitation of intended use.

Regarding the rejection of Claims 15 and 16 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent

Regarding Claims 15 and 16, the Applicants have cancelled the claims and

therefore respectfully request that this rejection be withdrawn.

Examiner's rejections of Claims 2 and 8

The Examiner stated that the Applicants have argued, during the Office Action response
5 filed September 21, 2006, that the Leung I, Kaufman, and Leung II patents do not
disclose or suggest forming the electron source of iridium as recited in Claims 2 and 8.
Then, the Examiner stated that Claims 2 and 8 recite that "the electron source filament is
formed of a material selected from the group consisting of tungsten, tantalum or iridium,"
and that this limitation is met by the filaments taught by the Leung I patent (referring to
10 column 4, lines 1-6) and the Kaufman patent (column 5, lines 1-3).

**Regarding the rejection of Claims 2 and 8 over the Leung-I patent in view of the
Kaufman patent and the Leung-II patent**

Regarding Claims 2 and 8, the Applicants refer the Examiner to page 24 of
15 this response.

Examiner's rejections of Claims 4-6

The Examiner stated that the Applicants have argued, during the Office Action response
filed September 21, 2006, that Leung I, Kaufman and Leung II do not disclose or suggest
20 the limitations of Claims 4-6. The Examiner further stated that the limitations of Claims
4-6 are process-type limitations that do not so limit the present apparatus claims, and that
these limitations are in effect recitations of intended use that the apparatus taught by the
Leung I patent is inherently capable of practicing. The Examiner stated that the recitation
of a particular method of use does not limit an apparatus claim, see *In re Casey*, 152
25 USPQ 235; *In re Rishoi*, 94 USPQ 71; *In re Young*, 25 USPQ 69; *In re Dulberg*, 129
USPQ 348; *Ex parte Thibault*, 64 USPQ 666; and *Ex parte Masham*, 2 USPQ2d 1647.

Regarding Claim 4, the Examiner stated that the Leung I patent (referring to column 2,
lines 13-50) teaches that his magnet filter means produces 98% atomic ions, and that the
30 Leung II patent (referring to column 13, lines 10-29) makes clear that a magnetic filter

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apparatus of the type taught by the Leung I patent can also produce 93% atomic oxygen ions. Then, the Examiner concluded that the Leung's apparatus is inherently capable of producing the 60% atomic oxygen ions referred to in Claim 4.

5 **Regarding the rejection of Claim 4 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent**

Regarding Claim 4, the Applicants refer the Examiner to page 24 of this response.

10 **Regarding Claim 5**, the Examiner stated that the "limitation of a discharge voltage between 50 and 150 volts" is taught by the Leung I patent (referring to column 5, lines 35-40), where the Leung I patent discloses the use of a discharge voltage of 80 volts. Then, the Examiner concluded that the apparatus taught by the Leung I patent has an inherent capability of operating with a voltage in the claimed range disclosed by Claim 5.

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Regarding the rejection of Claim 5 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent

Regarding Claim 5, the Applicants refer the Examiner to page 24 of this response.

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Regarding Claim 6, the Examiner stated that the "limitation of a pressure of between 6.0×10^{-5} and 1.2×10^{-4} torr." it taught by the Leung I patent (referring to column 5, lines 40-45) where the Leung I patent teaches that the vacuum pump of his apparatus is capable of operating in the 3×10^{-4} torr. pressure range. Then, the Examiner concluded that it would be expected that the apparatus taught by the Leung I patent would be capable of also operating at 1.2×10^{-4} torr. The Examiner further stated, once again, that a recitation of intended use does not require an apparatus to be operated in the recited manner, but only requires that the apparatus have an inherent capability of being operated according to the recited manner.

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Regarding the rejection of Claim 6 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent

Regarding Claim 6, the Applicants refer the Examiner to page 24 of this response.

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Claim Rejections - 35 U.S.C. § 103(a)

Examiner's rejections of Claims 3 and 9 under 35 U.S.C. § 103(a)

The Examiner rejected Claims 3 and 9 under 35 U.S.C. § 103(a) as being unpatentable over the Leung-I patent, in view of the Kaufman patent and the Leung-II patent for the reasons stated in the rejection of Claim 1 above, and taken in further view of Anderson (U.S. Patent No. 5,365,070, hereinafter referred to as the "Anderson patent").

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In particular, the Examiner stated that the Anderson patent teaches an ion source (referring to element 10 in Figure 1) including a magnetic holding metal member (referring to element 12 in Figure 2) made of carbon steel which has high magnetic permeability so that magnetic field can easily penetrate there through (referring to column 5, line 47 through column 6, line 2). The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize carbon steel in the construction of chamber having magnets there around so that magnetic field more efficiently penetrate there through.

Regarding the rejection of Claims 3 and 9 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent, and in further view of the Anderson patent

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Claim 3 is dependent upon Claim 1 and Claim 9 is dependent upon Claim 7, thus the Applicants respectfully refer the Examiner to the comments above regarding Claims 1 and 7. As the Leung-I, Kaufman, and Leung-II patents do not teach all of the claimed limitations in Claims 1 and 7, the Applicants submit that, for at least the reasons given above, Claims 3 and 9, which depend therefrom, are also allowable.

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For the foregoing reasons the Applicants respectfully believe that Claims 3 and 9, as written, are patentable over the combination of prior art references and respectfully request that this rejection of Claims 3 and 9 under 35 U.S.C. §103(a) be withdrawn.

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Claim Rejections - 35 U.S.C. § 103(a)

Examiner's rejections of Claim 10 under 35 U.S.C. § 103(a)

The Examiner rejected Claim 10 under 35 U.S.C. § 103(a) as being unpatentable over the Leung-I patent, in view of the Kaufman patent and the Leung-II patent for the reasons
10 stated in the rejection of Claim 1 above, and taken in further view of Mantei (U.S. Patent No. 4,483,737, hereinafter referred to as the "Mantei patent").

In particular, the Examiner stated that the Mantei patent teaches a plasma chamber (referring to element 10 in Figures 1 and 2) including a filament (referring to element 21
15 in Figure 1) therein and having a plurality of magnets (referring to element 14 in Figure 1) surrounding the chamber wherein the plasma chamber (referring to element 10 in Figures 1 and 2) is made of a nonmagnetic material such as stainless steel (referring to column 4, lines 29-56). Then, the Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize nonmagnetic
20 stainless steel as a suitable material for a plasma chamber such as in the Leung-I patent.

Furthermore, the Examiner stated that the Applicants have argued, during the Office Action response filed September 21, 2006, that the stainless steel taught by the Mantei patent is for a plasma chamber rather than a cooling chamber. The Examiner noted that
25 the Leung I patent teaches the use of a non-magnetic material such as aluminum as the material of construction for the magnet cooling jacket, and that the Mantei patent teaches that aluminum and stainless steel are known in the prior art as alternative materials of construction for non-magnetic structural parts. Then, the Examiner concluded that it would have been prima facie obvious to use stainless steel, which is a well-known

alternative non-magnetic material of construction, for forming the non-magnetic cooling jacket taught by the Leung I patent.

In response to the Applicants' argument that the Examiner has combined an excessive number of references, the Examiner stated that "reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention." See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Regarding the rejection of Claim 10 over the Leung-I patent in view of the Kaufman patent and the Leung-II patent, and in further view of the Mantei patent

- Since Claim 10 is dependent upon Claim 7, the Applicants respectfully refer the Examiner to the comments above regarding Claim 7. As the Leung-I, Kaufman, and Leung-II patents do not teach all of the claimed limitations in Claim 7, the Applicants submit that, for at least the reasons given above, Claim 10, which depends therefrom, is also allowable.
- As the justification for combining the Leung-I patent with the Mantei patent, the Examiner stated that "the Leung I patent teaches the use of a non-magnetic material such as aluminum as the material of construction for the magnet cooling jacket." However, the Applicants have not found this statement on the Leung I patent. Thus, the Applicants respectfully request that the Examiner please indicate exactly where in the Leung I patent the Examiner is finding this statement.
- In response to the Examiner's statement that the Examiner has not combined an excessive number of references, and that "reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention" See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991), the Applicants respectfully remind the Examiner that "it is impermissible to use the claimed invention

as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.” Id. at 1266, 23 USPQ2d at 1784, Appeal No. 1998-1472 Page 13 Application No. 08/427,721 (citing *In re Gorman*, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991)). Furthermore, the MPEP states that “the Examiner ordinarily should reject each claim on all valid grounds available, avoiding, however, undue multiplication of references.” See MPEP § 707.079(g) and MPEP § 904.03.

- For the foregoing reasons the Applicants respectfully believe that Claim 10, as written, is patentable over the combination of prior art references and respectfully request that this rejection of Claim 10 under 35 U.S.C. §103(a) be withdrawn. Additionally, Claim 10 is dependent upon Claim 7. Thus, the Applicants believe that Claim 10 is allowable, at least based on its dependency upon an allowable base claim.

Dependent Claims

Claims 2-6 are dependent upon Claim 1 and Claims 8-14 are dependent upon Claim 7. For at least the reasons given above, the Applicants submit that Claims 1 and 7 are patentable over the cited prior art. Therefore, in addition to the reasons set forth above, the Applicants submit that Claims 2-6 and 8-14 are also patentable over the cited prior art, at least based on their dependence upon an allowable base claim. Thus, the Applicants respectfully request that the Examiner withdraw all rejections of Claims 2-6 and Claims 8-14 and provide for timely allowance of the claims.

Closing Remarks:

The Applicants respectfully submit that, in light of the above remarks, the application and all pending claims are now in allowable condition. Therefore, reconsideration is
5 respectfully requested. Accordingly, early allowance and issuance of this application is respectfully requested.

Any claim amendments that are not specifically discussed in the above remarks are not made for patentability purposes, and it is believed that the claims would satisfy the
10 statutory requirements for patentability without the entry of such amendments. Rather, these amendments have only been made to increase claim readability, to improve grammar, and to reduce the time and effort required of those skilled in the art to clearly understand the scope of the claim language. Furthermore, any new claims presented
15 above are of course intended to avoid the prior art, but are not intended as replacements or substitutes of any cancelled claims. They are simply additional specific statements of inventive concepts described in the application as originally filed.

Further, it should be noted that amendment(s) to any claim is intended to comply with the requirements of the Office Action in order to elicit an early allowance, and is not
20 intended to prejudice Applicants' rights or in any way to create an estoppel preventing Applicant from arguing allowability of the originally filed claim in further off-spring applications.

In the event the Examiner wishes to discuss any aspect of this response, or believes that a
25 conversation with either Applicant or Applicant's representative would be beneficial, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

The Commissioner is authorized to charge any additional fees that may be required or
30 credit overpayment to the attached credit card form. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition

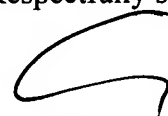
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to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed. The petition fee due in connection therewith may be charged to deposit account no. 50-2738 if a credit card form has not been included with this correspondence, or if the credit card could not be charged.

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Date

05/07/07

Respectfully submitted,



Cary Tope-McKay
Registration No. 41,350

15 Cary Tope-McKay
TOPE-MCKAY & ASSOCIATES
23852 Pacific Coast Highway #311
Malibu, CA 90265
Tel: 310-589-8158
Mobile: 310-383-7468
20 Fax: 310-943-2736
E-mail: cmckay@topemckay.com